U2 HP Turbine Upgrade Acceptance Test Results Summary

Acceptance Tests Confirmation			ion Tests			Pre-
Test 7	Test 8	Test 9	Test 10	Average	Gaurantee	<u>Upgrade</u>
92.85	92.83	92.72	92.80	92.80	92.20	83.48
40.04 (D0.08) 42.10 + O.V					olw)	
302.9	304.5	300.4	304.4	303.02	299.0	259.4
363.7 (b.1.4) 7.868.				4.0mus		
7,074	7,078	7,063	7,070	7,071	6,900	6,412
2016 (Pd'2) 2010'2 121KAP						
92.01	92.06	92.17	91.05	91.82	**	91.23
7,701	7,636	7,671	7,676	7,671	7,683	7,807
989.4	989.5	987.8	988.2	988.7	973.2	875.3
	Test 7 92.85 302.9 3,07,074 0,07 92.01 7,701	Test 7 Test 8 92.85 92.83 92.84 (A) 302.9 304.5 303.7 (A) 7,074 7,078 1016 (A) 92.01 92.06 7,701 7,636	Test 7 Test 8 Test 9 92.85 92.83 92.72 92.84 (A0.08) 92 302.9 304.5 300.4 303.7 (A1.4) 36 7,074 7,078 7,063 7,074 7,078 7,063 92.01 92.06 92.17 7,701 7,636 7,671	Test 7 Test 8 Test 9 Test 10 92.85 92.83 92.72 92.80 302.9 304.5 300.4 304.4 303.7 (A.I.Y.) 303.3 7,074 7,078 7,063 7,070 7,076 (A.S.) 7066.5 92.01 92.06 92.17 91.05 7,701 7,636 7,671 7,676	Test 7 Test 8 Test 9 Test 10 Average 92.85 92.83 92.72 92.80 92.80 302.9 304.5 300.4 304.4 303.02 303.7 (A.A.) 300.3 7,070 7,071 7,074 7,078 7,063 7,070 7,071 7,076 (A.A.S.) 7066.5 92.17 91.05 91.82 7,701 7,636 7,671 7,676 7,671	Test 7 Test 8 Test 9 Test 10 Average Gaurantee 92.85 92.83 92.72 92.80 92.80 92.20 302.9 304.5 300.4 304.4 303.02 299.0 303.7 (▶ 1.4) 303.3 303.02 299.0 7,074 7,078 7,063 7,070 7,071 6,900 101.6 (▶ 9.5) 7066.5 171.6 171.6 92.01 92.06 92.17 91.05 91.82 7,701 7,636 7,671 7,676 7,671 7,683

Notes:

All tests conducted at turbine throttle valves wide-open.

Tests 7 & 8 conducted by PGT with test instrumentation. Refer to the Thermal Peerformance Test Results on Intermountain Power Project (IPP) Unit #2 Turbine Cycle test report (April 2002) for additional information.

Tests 9, 10 & upgrade tested using station instrumentation corrected to test instruments readings.

HP turbine efficiency - PGT test uncertainty ±0.346%, enthalpy drop efficiency calculated with inlet conditions measured before stop valves, exhaust measured after balance gland leakage flow mix.

HP turbine wheel power - PGT test uncertainty ±2.508%, throttle flow corrected to design conditions (2412.2 psia, 1000°).

Throttle flow - PGT test uncertainty ±2.510%, corrected to design throttle conditions (2412.2 psia, 1000°).

<u>IP turbine efficiency</u> - Enthalpy drop efficiency calculated with inlet conditions measured before combined reheat valves and exhaust measured at LP-A turbine inlet (PGT), 14th stage extraction (Station).

Net turbine cycle heat rate - PGT test uncertainty ±2.554%, test heat rate was adjusted to PGT test values and corrected to design throttle & reheat conditions, design turbine back-pressure, and contract cycle using station pepse model.

Gross power - PGT test uncertainty ±0.459%, station measurement corrected to PGT test measurements and corrected to design throttle & reheat conditions, design turbine back-pressure, 6.9% reheat pressure drop, and contract cycle using station pepse model.